

NDSU Langdon Research Extension Center Tiling Project

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pecially in the case of field tiling when tiles are placed within or below a sodic layer, as tiles will not be able to improve soil drainage due to poor soil water movement above or around the tiles. It is not actually faulty tiling, but is a chemical soil characteristic.

The Langdon Research Extension Center is proposing a very unique tiling project on the northwestern side of the center (behind USDA and D & B buildings) which will play a pivotal role to answer burning questions like:

- How to remediate saline as well as sodic soils quickly and efficiently?
- Can sodic soils be tiled?
- Screening of cost-effective and efficient amendments for sodic soil remediation?
- Screening of salt-tolerant crops/grasses?
- Screening of water-use efficient crops?

The total project area will be comprised of 25 acres with 7.2 acres solely dedicated to the research of the above mentioned questions. The Project will also include a demo replication which will serve the ongoing extension activities.

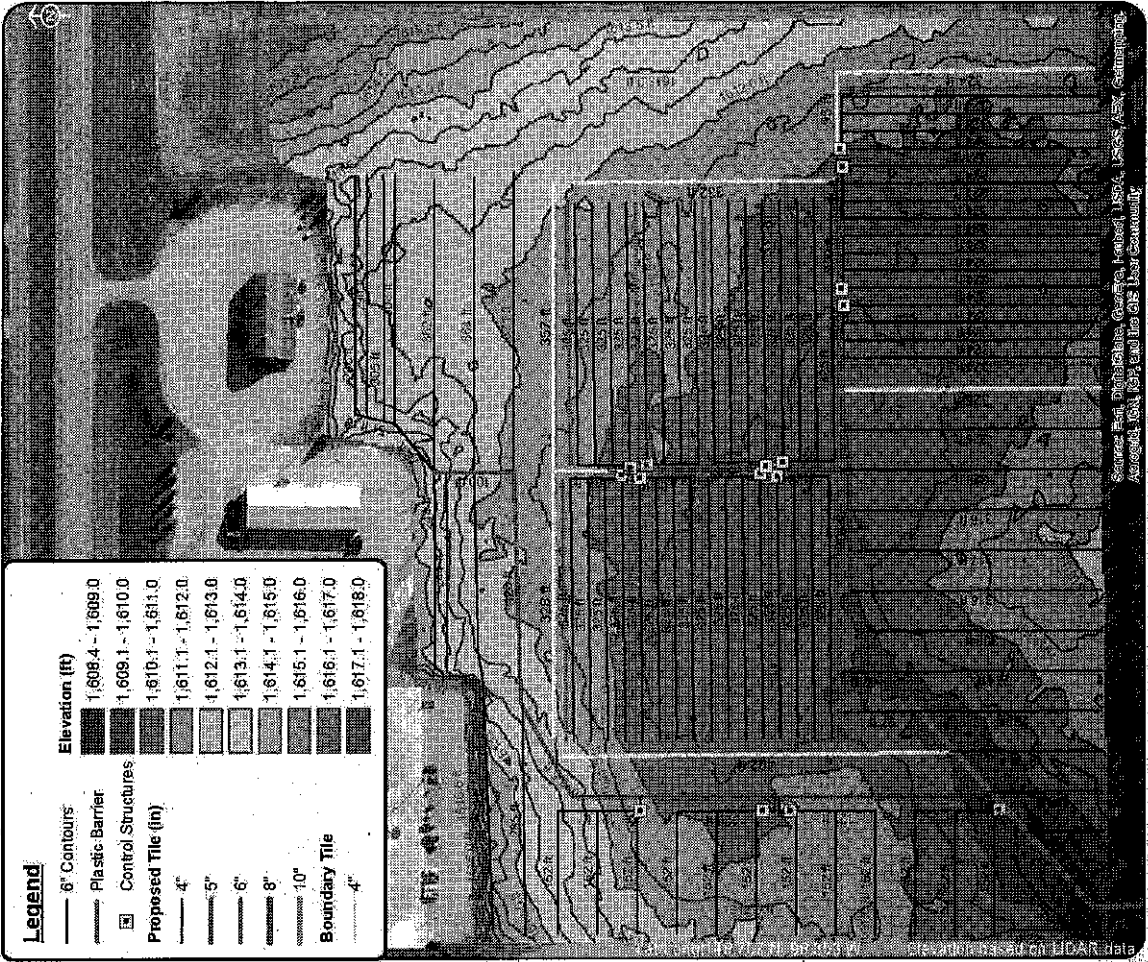
With the installation of this project, Langdon REC is expected to better serve the northeast North Dakota producers.

Soil salinity (soils with excessive levels of soluble salts) is a big "Soil Health" concern throughout the state of North Dakota, especially in the northeastern part. Often, it is combined with soil sodicity (soils with excessive sodium ions attached to the soil cation exchange sites) issues which require application of calcium based soil amendments to remediate. This apart from the regular salinity remediation practices to improve soil drainage and lowering down the water-table level.

Unlike excessive salts (which cause drought like symptoms for the plants by not letting the plant roots uptake the water even under wet soil conditions), excessive sodium causes the disintegration of clay particles from the larger aggregates, resulting in the plugging of soil pores. This leads to the sealing of soil layers which greatly reduces the downward movement of soil water.

This creates a question mark when trying to remediate the sodic soils, es-

Drainage Water Management Study Plots



Map created by Nathan Orr - 31 Jan 2014
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